



# FACT SHEET

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## U.S. ARMY CHEMICAL MATERIALS AGENCY

### Current and revised chemical warfare agent AELs\* (in milligrams per cubic meter of air)

Agent type	AEL Information	AEL type			
		General population limit (GPL)	Worker population limit (WPL)	Short-term exposure limit (STEL)	Immediately dangerous to life or health (IDLH)
GA, GB	<b>Revised limit (current limit)</b>	0.000001 (0.000003)	0.00003 (0.0001)	0.0001 (none)	0.1 (0.2)
	<b>Averaging time</b>	24 hours	8 hours	15 minutes	≤30 minutes
VX	<b>Revised limit (current limit)</b>	0.0000006 (0.000003)	0.000001 (0.00001)	0.00001 (none)	0.003 (0.02)
	<b>Averaging time</b>	24 hours	8 hours	15 minutes	≤30 minutes
HD	<b>Revised limit (current limit)</b>	0.00002 (0.0001)	0.0004 (0.003)	0.003 (none)	0.7 (none)
	<b>Averaging time</b>	12 hours	8 hours	≤15 minutes	≤30 minutes

\*The Centers for Disease Control and Prevention is responsible for setting airborne exposure limits (AELs). For the current AELs, see FR 53, No. 50, pp. 8504-7 (March 15, 1988). For the revised nerve agent AELs, see FR 68, No. 196, pp. 58348- 51 (October 9, 2003); for the revised mustard agent AELs, see FR 69 No. 85, pp. 24164-8 (May 3, 2004).

The table shows the revised chemical warfare agent airborne exposure limits (AELs) recently issued by the Centers for Disease Control and Prevention (CDC) and the current AELs. The current AELs were issued by the CDC in 1988, and the Army has been monitoring air at its chemical weapons storage and disposal facilities in compliance with the AELs since then. The revised limits will take effect Jan. 1, 2005 for nerve agents and July 1, 2005 for mustard agents.

The CDC used the Environmental Protection Agency's updated risk assessment method in revising the AELs, resulting in more stringent limits. In issuing the new AELs, the CDC noted that "the recommended changes to the AELs do not reflect a change in, nor a refined understanding of, demonstrated human toxicity of these substances but rather the changes resulted from updated and minimally modified risk assessment assumptions." (Federal Register, Oct. 9, 2003) The CDC also concluded that workers and the public have been safe and fully protected under the current AELs, stating that "there is no indication that the current exposure limits, as implemented by the U.S. Army Program Manager for Chemical Demilitarization [now the Chemical Materials Agency], have been less than fully protective of human health." (Federal Register, Jan. 8, 2002)

**General population limit (GPL)** – concentration that the unprotected general population can be exposed to 24 hours a day, seven days a week for a long period of time without experiencing any adverse health effects.

**Worker population limit (WPL)** – concentration that an unprotected worker can operate safely in eight hours a day, five days a week for a working lifetime without adverse health effects. (The Army's time weighted average is the current WPL.)

- Under the revised WPL, workers will not need to take immediate protective action if the WPL is exceeded (see STEL).
- The revised WPL will be monitored historically (e.g., after an eight-hour shift). If exceeded over an eight-hour average, the source of the contamination will be investigated and corrective action will be taken.

**Short-term exposure limit (STEL)** – an unprotected worker may operate above the WPL up to the STEL safely for one or more 15-minute periods (depending on the agent) during a workday.

- The STEL is set at the same value as the current WPL.
- When the STEL is exceeded, workers will take the same protective action they do under the current WPL.
- The STEL is part of the revised AELs only.

**Immediately dangerous to life or health (IDLH)** – level at which an unprotected worker could escape within 30 minutes without experiencing escape-impairing or irreversible health effects.

For more information,  
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